

### REMARKS

Applicants have carefully reviewed this Application in light of the Office Action mailed November 1, 2006. Claims 1-15 were previously cancelled due to an election/restriction requirement. Claims 16-31 are pending in this Application. Claims 26-31 stand rejected under 35 U.S.C. § 102, Claims 16-20 stand rejected under 35 U.S.C. § 103 and Claims 21-31 stand rejected under 35 U.S.C. § 112. Claims 16, 21, and 26 have been amended to further define various features of Applicants' invention. Applicants respectfully request reconsideration and favorable action in this case.

#### **Rejections under 35 U.S.C. § 112**

Claims 21-31 stand rejected by the Examiner under 35 U.S.C. § 112, second paragraph, as being indefinite and failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants submit that these rejections are moot in light of the current amendments to Claims 21 and 26, and respectfully request full allowance of Claims 21 and 26 as amended.

#### **Rejections under 35 U.S.C. § 102**

Claims 21-31 stand rejected by the Examiner under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,640,048 issued to Erich Selna ("*Selna*").

*Selna* discloses a four-layer ball grid array (BGA) package with a BGA Vdd plane and BGA Vss plane. The BGA Vdd and Vss plane are positioned between upper and lower BGA package traces. (Col. 4, Lines 3-31). These upper and lower BGA package traces correspond with each other and are connected by means of vias. (Col. 8, Lines 38-40). The design is intended to increase shunt capacitance and improve thermal dissipation. (Col. 5, Lines 18-25).

Applicants respectfully submit the *Selna* does not teach all of the elements of Applicants' claims. For example, amended independent Claim 21 recites, in part:

an electrically conductive trace electrically distinct from both the voltage plane and the ground plane, the electrically conductive trace comprising:

a first portion lying in a first plane located closer to the ground plane than to the voltage plane;

a second portion lying in a second plane located closer to the voltage plane than to the ground plane;

a first electrically conductive via connecting a first point of the first portion with a first point of the second portion, the first via electrically distinct from both the voltage plane and the ground plane;  
and

a second electrically conductive via connecting a second point of the first portion with a second point of the second portion, the second via electrically distinct from both the voltage plane and ground plane.

(emphasis added).

*Selna* fails to teach or suggest these features. *Selna* teaches:

In FIG. 3, the Vss vias 6C, 6C' make electrical and thermal connection with the BGA Vss plane 200, but not with the underlying BGA Vdd plane 260. Similarly, the Vdd vias 6A are electrically insulated from the BGA Vss plane 200, but make electrical contact with the BGA Vdd plane 260. The various signal vias 6B are electrically insulated from both planes 200, 260. Such insulation can result from defining a relatively large opening in plane 200 and/or 260 through which a via passes that is not to make electrical contact with the plane.

(Col. 8, Lines 28-37). (emphasis added).

Thus, none of the traces shown in Figure 3 of *Selna* can be equated with an electrically conductive trace including (a) first and second portions and (b) first and second vias connecting the first and second portions at different points, where each of the first and second vias is electrically distinct from both the voltage plane and ground plane, as recited in amended Claim 21.

First, trace 8A/10A of *Selna* cannot be equated with the trace of Claim 21 because trace 8A/10A is electrically connected to Vdd plane 260 through via 6A. Also, portions 8A and 10A of trace 8A/10A are connected only by a single via 6A at a first point of portions 8A and 10A.

Second, trace 8C/10C of *Selna* cannot be equated with the trace of Claim 21 because trace 8C/10C is electrically connected to Vss plane 200 through via 6C.

Third, trace 8C'/10C' of *Selna* cannot be equated with the trace of Claim 21 because trace 8C'/10C' is electrically connected to Vss plane 200 through via 6C'. Also, portions 8C' and 10C' of trace 8C'/10C' are connected only by a single via 6C' at a first point of portions 8C' and 10C'.

Fourth, trace 8B/10B of *Selna* cannot be equated with the trace of Claim 21 because portions 8B and 10B of trace 8B/10B are connected only by a single via 6B at a first point of portions 8A and 10A. Thus, trace 8B/10B does not include “a first electrically conductive via connecting a first point of the first portion [of the trace] with a first point of the second portion [of the trace] . . . [and] a second electrically conductive via connecting a second point of the first portion [of the trace] with a second point of the second portion [of the trace],” as recited in amended Claim 21.

For at least these reasons, *Selna* cannot anticipate amended Claim 21. Thus, Applicants respectfully request reconsideration and allowance of amended Claim 21, as well as Claims 22-25 that depend from Claim 21. In addition, for analogous reasons, Applicants request reconsideration and allowance of amended Claim 26, as well as Claims 27-31 that depend from Claim 26.

**Rejections under 35 U.S.C. §103**

Claims 16-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Selna* in view of U.S. Patent 6,236,572 issued to Abeye Teshome et al. ("*Teshome*").

Applicants submit that for reasons analogous to those set forth above with respect to Claim 21, *Selna* does not disclose, teach or suggest at least the following features recited in amended Claim 16:

an electrical trace, electrically distinct from the voltage plane and the ground plane, the electrical trace including a first continuous path and a second continuous path, the first continuous path located closer to the ground plane than to the voltage plane and the second continuous path located closer to the voltage plane than to the ground plane, whereby the first path is substantially similar to the second path; and

the first path electrically coupled to the second path by a first conductive via connecting a first end of the first path with a first end of the second path and by a second conductive via connecting a second end of the first path with a second end of the second path, each of the first and second vias electrically distinct from both the voltage plane and the ground plane.

*Teshome* also fails to disclose these features. For at least these reasons, the proposed combination of *Selna* and *Teshome* cannot render amended Claim 16 obvious.

Thus, Applicants respectfully request reconsideration and allowance of amended Claim 16, as well as Claims 17-20 that depend from Claim 16.

**CONCLUSION**

Applicants appreciate the Examiner's careful review of the application. Applicants have made an earnest effort to place this case in condition for allowance in light of the amendments and remarks set forth above. For the foregoing reasons, Applicants respectfully request reconsideration of the rejections and full allowance of Claims 16-31, as amended.

Applicants believe there are no fees due at this time, however, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-2148 of Baker Botts L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512.322.2689.

Respectfully submitted,  
BAKER BOTTS L.L.P.  
Attorney for Applicants



Eric M. Grabski  
Reg. No. 51,749

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SEND CORRESPONDENCE TO:  
BAKER BOTTS L.L.P.  
CUSTOMER ACCOUNT NO. **31625**  
512.322.2689  
512.322.8320 (fax)